

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously presented) An equatorial tracking platform for a telescope, operable at a plurality of latitudes, said platform comprising:

an essentially planar telescope platform, said platform having a top and bottom side, a platform base being situated below said platform top;

said platform base having a plurality of adjustable engagement angle rolling bearing elements;

said essentially planar telescope platform having attached to the bottom side a contoured rear bearing block having fabricated into its surfaces varying radii segments;

said essentially planar telescope platform also having a front bearing surface of fixed radius and adjustable angle;

said front bearing surface and rear bearing block contacting said rolling bearing elements.

2. (Currently amended) An equatorial tracking platform for a telescope, operable at a plurality of latitudes by ~~means of~~ adjusting the engagement angles of its rolling surfaces and contact rollers independent of a platform base angle.

3. (Previously presented) An equatorial tracking platform for a telescope of claim 1, further comprising motors fitted to one or more of its rolling bearing elements.

4. (Previously presented) An equatorial tracking platform for a telescope, operable at a plurality of latitudes, said platform comprising:

an essentially planar telescope platform, said platform having a top and bottom side, a platform base being situated below said platform top;

said platform base having a plurality of adjustable engagement angle rolling bearing elements;

said essentially planar telescope platform having attached to the bottom side a contoured rear bearing block having fabricated into its surfaces varying radii segments;

said essentially planar telescope platform also having a front bearing surface having fabricated into its surfaces varying radii segments.

said front bearing surface and rear bearing block contacting said rolling bearing elements.

5. (Previously presented) An equatorial tracking platform for a telescope of claim 4, further comprising motors fitted to one or more of its rolling bearing elements.

6. (Currently amended) An equatorial tracking platform for a telescope, operable at a plurality of latitudes, said platform comprising:

an essentially planar telescope platform, said platform having a top and bottom side, a platform base being situated below said platform top;

said platform base having a plurality of adjustable engagement angle rolling bearing elements;

said essentially planar telescope platform having attached to the bottom side a contoured rear bearing block having fabricated into its surfaces varying radii segments;

said essentially planar telescope platform also having a front bearing surface having fabricated into its surfaces a fixed radii segment segments.

said front bearing surface and rear bearing block contacting said rolling bearing elements.

7. (Previously presented) An equatorial tracking platform for a telescope of claim 6, further comprising motors fitted to one or more of the rolling bearing elements.

8. (Previously presented) A tracking platform for a telescope, comprising:

- a planar base;
- a plurality of adjustable hinges attached to the planar base;
- a roller mounted to each of the plurality of adjustable hinges;
- a telescope platform supported by the rollers;

wherein the telescope platform comprises a rear bearing block comprising

- a plurality of contours of differing radii in contact with at least two of the rollers.

9. (Previously presented) A tracking platform for a telescope according to claim 8, wherein the contours of differing radii are defined as a function of contact angle between the rear bearing block and the at least two rollers.

10. (Previously presented) A tracking platform for a telescope according to claim 8, further comprising:

- at least one additional adjustable hinge attached to the telescope platform;
- a front bearing surface attached to the at least one adjustable hinge in contact with at least two more of the rollers.

11. (Previously presented) A tracking platform for a telescope according to claim 10 wherein the plurality of adjustable hinges comprise a front pair of hinges and a rear pair of hinges, wherein each of the pair of front and rear hinges is adjusted from vertical by an angle of displacement equal to a latitude angle of operation.

12. (Previously presented) A tracking platform for a telescope according to claim 11 wherein the at least one additional adjustable hinge is adjusted to an angle of displacement equal to 90 degrees plus the latitude angle of operation.

13. (Previously presented) A tracking platform for a telescope according to claim 10 wherein the front bearing surface comprises a plurality of radii as a function of latitude contact angle.

14. (Previously presented) A tracking platform for a telescope according to claim 8 wherein the at least one additional adjustable hinge is attached to a top surface of the telescope platform.

15. (Previously presented) A tracking platform for a telescope according to claim 8 wherein the plurality of contours of differing radii comprise a family of contours defined as a function of latitudinal angle according to the following equation:

$$r_j = A + B * \sin(j);$$

wherein A is a front bearing surface radius of the telescope platform, j is the latitude angle, and B is a spacing between the front bearing surface and the rear bearing block.

16. (Previously presented) A method of operating a telescope tracking platform, comprising:

providing a planar base, a plurality of adjustable hinges attached to the planar base, a roller mounted to each of the plurality of adjustable hinges, a telescope platform supported by the rollers, the telescope platform comprising a rear bearing block comprising a plurality of contours of differing radii in contact with at least two of the rollers;

adjusting each of the plurality of adjustable hinges to an angle of displacement from vertical equal to a latitude angle of operation.

17. (Previously presented) A method of operating a telescope tracking platform according to claim 16, further comprising:

providing at least one additional adjustable hinge attached to the telescope platform and a front bearing surface attached to the at least one adjustable hinge in contact with at least two more of the rollers;

adjusting the at least one additional hinge to an angle of displacement equal to 90 degrees plus the latitude angle of operation.

18. (Currently amended) A tracking platform for a telescope, comprising:
a planar base;
a plurality of rollers attached to the planar base;
a telescope platform supported by the plurality of rollers;
wherein the telescope platform comprises a rear bearing block comprising
a non-conical surface comprising a plurality of continuous contours of differing
radii in contact with at least two of the rollers.

19. (Previously presented) A tracking platform for a telescope according to
claim 18, wherein the telescope platform comprises a front bearing block comprising a
plurality of continuous contours of differing radii in contact with at least two of the
rollers.

20. (New) A tracking platform for a telescope, comprising:
a base;
a plurality of rollers attached to the base;
a telescope platform supported by the plurality of rollers;
wherein the telescope platform comprises a bearing block comprising a
plurality of contours of differing radii in contact with at least two of the rollers, at least
two of the plurality of contours comprising non-common axes.

21. (New) A tracking platform for a telescope according to claim 20 wherein
the plurality of contours are continuous and non-rotationally-symmetric.

22. (New) A tracking platform for a telescope, comprising:

- a base;
- a plurality of rollers hingedly attached to the base;
- a telescope platform supported by the plurality of rollers;
- a front bearing plate attached to the telescope platform by an adjustable hinge assembly;

wherein the telescope platform comprises a rear bearing block comprising a plurality of continuous contours of differing radii in contact with at least two of the rollers.

23. (New) A method of operating a telescope tracking platform, comprising:

- providing a planar base, a plurality of adjustable hinges attached to the planar base, a roller mounted to each of the plurality of adjustable hinges, a telescope platform supported by the rollers, the telescope platform comprising a rear bearing block comprising a plurality of contours of differing radii in contact with at least two of the rollers;
- adjusting the differing radii as a function of contact angle with the rollers to correspond with a latitude angle of operation.

24. (New) A method of operating a telescope tracking platform according to claim 23, further comprising:

providing at least one additional adjustable hinge attached to the telescope platform and a front bearing surface attached to the at least one adjustable hinge in contact with at least two more of the rollers;

adjusting the at least one additional hinge to an angle of displacement equal to 90 degrees plus the latitude angle of operation.

25. (New) An equatorial tracking platform for a telescope, operable at a plurality of latitudes, said platform comprising:

a telescope platform, said platform having a top and bottom side, a platform base being situated below said platform top;

said platform base having a plurality of adjustable engagement angle rolling bearing elements;

said essentially planar telescope platform having attached to the bottom side a contoured rear bearing block having fabricated into its surfaces varying radii segments;

said essentially planar telescope platform also having a front bearing surface of fixed radius and adjustable angle;

said front bearing surface and rear bearing block contacting said rolling bearing elements.

REMARKS

This responds to the Office Action dated 22 March 2005. Applicant respectfully requests reconsideration of the application in view of the foregoing amendments and following remarks. New claims 20-22 have been added. Claims 2, 6 and 18 has been amended. The amendment to claim 6 is a broadening amendment. Accordingly, claims 1-22 remain pending in the application.

In the Drawings

The Examiner objected to the drawings under 37 CFR 1.83(a). The Examiner stated that the front bearing surface having varying radii segments (claim 4) and fixed radii segments (claim 6) must be shown or the features must be cancelled from the claims. Applicant respectfully traverses the objection.

Applicant notes that one embodiment of a front bearing surface 11 is shown clearly in Fig. 5. The front bearing surface 11 is shown with a fixed radius segment in Fig. 5. Therefore, the elements of claim 6 are shown. Moreover, Figs. 3 and 4 clearly illustrate an embodiment of varying radii segments that may be used as a front bearing surface according to other embodiments of the present invention. Accordingly, both fixed and varying radii segments are clearly shown in the figures and fully supported by the original application. Therefore, Applicant respectfully requests that the objections to the drawings be withdrawn.